

REMARKS

Claims 1-2, 6-7, 10-13, 17-21 and 24 remain pending after amendment.

Claim Amendments

Support for the 60% elongation limitation resides at paragraph [0029] of the specification. Support for the limitation whereby the fiber exhibits both thermal shrinkability and elastomeric behavior resides at paragraph [0033]. Support for the use of helical fibers formed from eccentric core/sheath or side-by-side configuration resides at paragraph [0034]. No new matter is added by this amendment.

Interview with Examiner

Applicants acknowledge with appreciation the courtesy extended by the Examiner during the telephone interview of June 28, 2006. During the interview, the above amendments were discussed and the distinctions that exist between the claimed invention and the cited prior art were discussed. No agreement was reached regarding the allowance of the pending claims. The arguments presented by applicants during the interview are discussed in detail below.

Rejection of Claims 1-2 and 10 under 35 USC 103(a)

Claims 1-2 and 10 stand rejected under 35 USC 103(a) as being unpatentable over Akihiko JP 09-003755 in view of Schleinz et al U.S. Patent No. 5,612,118 and Carey U.S. Patent No. 4,551,378.

By way of review, claim 1 is directed to a bulky sheet material comprised of first and second layers partly joined together, with the first layer having a number of fiber-filled protrusions. The second layer comprises a web formed by carding comprised of latent crimping fibers having a helical shape which are made of a thermoplastic polymer *having an eccentric core/sheath or side-by-side configuration and comprising two thermoplastic polymers different in shrinkage* and exhibit both thermal shrinkability and elastomeric behavior. The first layer is comprised of a fiber aggregate which comprises fibers which are made of a thermoplastic polymer which have substantially no thermal shrinkability or do not shrink at or below the thermal shrinkage temperature of the fibers exhibiting thermal shrinkability. The sheet is heat-treated at or above a temperature at which thermal shrinkage of the fibers constituting the second layer is initiated. The second layer accordingly shrinks to form protrusions in the first layer. The

sheet exhibits an elastic recovery of at least 60% from an extension of 50%.

Applicants' sheet material is formed by superimposing the first and second layers of fiber aggregate and subjecting the superimposed layers to heat treatment. The elastomeric fiber aggregate of the second layer shrinks, while the fiber aggregate of the first layer does not - thus forming the protrusions in the first layer due to the contraction (shrinkage) of the elastomeric second layer.

In order to enhance the absorbency of the sheet material, as well as the absorbent article which contains the sheet material, and to assist in maintaining the shape of the material, the sheet material includes protrusions in the first layer *filled with fibers*.

Advantageously, the sheet of the present invention exhibits desirable thickness both under load and unloaded, desirable compressive deformation, reduced density under load and unloaded, significant extension recovery, and conformability to both contour and movement of the wearer.

More advantageously, the use of latent crimping fibers having a helical crimp enables highly advantageous results to be achieved in comparison to the prior art. The fact that the

second layer is comprised of such fibers enhances the ability of the second layer to form fiber-filled protrusions of highly desirable properties.

The claimed invention is neither disclosed nor suggested by the cited prior art.

Akihiko is directed to a non-woven fabric for use as an inelastic fastener component comprised of a shrunk fiber layer and a non-shrinking fiber layer which are partially bonded together by heat welding. Fiber-filled protrusions are formed in the non-shrinking layer upon shrinking of the heat-shrinkable layer. No elasticity is provided in the non-woven fabric. Indeed, the reference does not provide for any elasticity due to the fact that the non-woven product is intended to be used as a surface fastener, and not as an elastic non-woven product having applicability as an absorbent article.

Further, in the invention of the reference, the heat-shrunk layer does not exhibit shrinkability and elastomeric behavior consistent with the claimed invention for the reason that the heat-shrinking fibers of the reference are neither crimping fibers nor elastomeric fibers.

Such as result is in direct contrast to the claimed invention which provides for a recovery of 60% or more from 50%

extension, a limitation not taught by but taught away from the reference.

Applicants' Comparative Example 4 confirms that a bulky sheet material made in a manner consistent with the teachings of Akihiko et al does not possess the advantageous properties exhibited by the bulky sheet material of the claimed invention. See Table 1 at page 17 of the specification in this regard.

The Examiner's attention is again directed to Table 1 at page 17 of the specification where the advantages of the claimed invention are made apparent.

The sheet material of Examples 1-3 exhibit highly desirable thickness in both loaded and unloaded conditions, a high percentage of compressive deformation, desirable apparent density under both loaded and unloaded conditions, an extension recovery of significant magnitude, and desirable conformability to contour and movement values. All of these physical characteristics are important with respect to providing an acceptable absorbent sheet material for use by a wearer in an absorbent article.

By contrast, the sheet material of Comparative Example 4 (which corresponds to the type of material disclosed by Akihiko et al) fails to possess such desirable physical characteristics.

Indeed, the sheet material of Comparative Example 4 suffers with respect to each of the above-mentioned physical properties - the sheet material is less thick, has less compressive deformation, is more dense, has less extension recovery, and less conformability to contour and movement.

Comparative Example 4 thus makes clear how a sheet material such as taught by Akihiko et al is completely distinct from that of the claimed invention from the standpoint of overall physical properties and function.

In order to assist in distinguishing over the teachings of Comparative Example 4 from the standpoint of extension recovery, the claims now provide for "a recovery of 60% or more from 50% extension".

The additionally-cited references of Schleinz and Carey et al not only do not cure the deficiencies of Akihiko, but cannot be logically combined therewith to result in the claimed invention.

Schleinz teaches that a joined layer can be gathered by elastic fibers that are heat shrunk (column 8, lines 1-10). In view of this teaching, the Examiner takes the view that it would have been obvious to use heat shrinkable fibers to gather the web of Akihiko.

However, even if it is appropriate to modify the shrinkable layer of Akihiko to incorporate the elastic layer of Schleinz, which applicants dispute, the elastic layer of Schleinz differs from applicants' claimed elastic layer. Also, it is illogical to combine the elastic layer of Schleinz with Akihiko since Akihiko not only does not use an elastic layer, but the use of an elastic layer in Akihiko would be inconsistent with the invention of Akihiko.

The elastic layer 52 of Schleinz is further not a "carded web comprised of latent crimping fibers" as required in applicants' claims - the reference instead teaches that layer 52 is comprised of "any suitable elastic material, and can be in the form of a flat sheet or layer of elastic material or a plurality of strands, ropes or the like, of elastic material." See column 4, lines 36-40 of the reference.

The reference also fails to teach the presence of "fiber-filled protrusions" in the first layer consistent with applicants' claims. Schleinz instead provides for the presence of unfilled open elevated portions 60.

Importantly, no motivation or suggestion resides in either of the references to replace the non-elastic layer of Akihiko with the heat shrinkable layer 52 of Schleinz, especially given

the teachings of Akihiko in this regard. Indeed, the modification of Akihiko in the manner suggested by the Examiner would not only result in a sheet material of diminished permeability in contrast to that achieved by applicants' invention, but in a sheet product which has less suitability for its intended purpose (i.e., as a fastener material).

It is further noted that dependent claim 10 is directed to an embodiment wherein the first layer is comprised of one of a carded web, a nonwoven fabric, or a knitted fabric. The embodiment of claim 10 is clearly distinguishable over the teachings of Schleinz, as the reference is silent with respect to the use of such webs.

Applicants similarly find the Carey reference to be non-combinable with (and irrelevant to) the teachings of Akihiko. Carey is directed to a non-woven stretch fabric which is heated to provide thermal bonding to the fibers, and is cited to teach "a web of carded fibers that are latent heat shrinkable fibers." The Examiner further states that "after heating of the heat shrinkable fibers, the web has elastic behavior." (Page 3 of Action)

However, even if such teachings have relevance to the claimed invention, which applicants dispute, the reference does

not teach the bonding together of multiple layers of fibers as in the claimed invention.

The Examiner concludes at page 3 of the Action in support of the rejection:

"The instant invention claims the use of crimped fibers with elastic behavior after heat shrinking that form a gathered web with projections that are fiber filled. It would have been obvious to one of ordinary skill in the art to form the gathers of the laminate of Akihiko et al by the use of previously heat shrunk crimped fibers that have elastic behavior that are stretched and then joined to the layer to be gathered and then allowed to contract in order to avoid heating all layers of the laminate of Akihiko et al because of the teachings of Schleinz et and Carey et al."

It is clear that the Examiner, absent reference to the "elastic behavior" of the claimed sheet material, would not have acquired the requisite motivation to seek to modify Akihiko et al to incorporate an elastic layer consistent with applicants' teachings. The mere fact that one of ordinary skill in the art, when faced with a number of unrelated teachings in the art, could possibly combine such teachings to arrive at a particular embodiment, does not also mean that the embodiment is an obvious variation of the prior art.

Applicants thus believe that the Examiner's combination of the teachings of the above references is based on a hindsight

analysis of the references, and lacks sufficient motivation in the art to result in the claimed invention. This is especially true given the fact that the Examiner seeks to modify Akihiko in a manner inconsistent with its own teachings.

In view of the above, the rejection is without basis and should be withdrawn.

***Rejection of Claims 6-7, 11-13, 17-19, 20-21 and 24
under 35 USC 103(a)***

Claims 6-7, 11-13, 17-19, 20-21 and 24 stand rejected as being unpatentable under 35 USC 103(a) as being unpatentable over Akihiko '755 in view of Schleinz, Zelazoski et al and Carey. This rejection respectfully is traversed.

By way of review, independent claim 7 is directed to an absorbent article comprised of a liquid-permeable topsheet, a liquid-impermeable backsheet and an absorbent member interposed therebetween. At least one of the backsheet, absorbent member or topsheet is comprised of the bulky sheet material as defined by claim 1. The claimed invention is neither disclosed nor suggested by the cited prior art.

The deficiencies of Akihiko '755, Schleinz, and Carey are discussed above. The additional citation of Zelazoski et al does not overcome such deficiencies.

Indeed, the mere citation of Zelazoski to teach the presence of "perforations" in claim 6 does nothing to address the inadequacies of the primary references.

Again, claim 7 is directed to an *absorbent article* comprised of a liquid-permeable topsheet, a liquid-impermeable backsheet, and an absorbent member (as defined by claim 1). Claim 7 provides for the presence of fiber-filled protrusions in the first layer consistent with claim 1. None of the cited references teaches or suggests *the absorbent article* of claim 7 having such a structure.

Zelazoski may be the most relevant of the cited references in relation to the providing of an absorbent article. Zelazoski et al teaches the presence of perforations as well as the use of the absorbent member in an absorbent article. However, the Zelazoski reference discloses a substrate formed from an elastic film to which is attached a non-woven layer having slits placed therein. The slits form "protrusions" upon shrinkage of the elastic film layer.

Again, the teachings of Zelazoski are *inapplicable* to the claimed invention. An elastic film is provided, and is heat shrunk to cause the adjacent non-woven layer to form an "undulating surface" on the non-woven layer. The elastic film

obviously differs significantly from applicants' carded web. Zelazoski is thus directed to a different structure than claimed by applicant.

The Examiner's assertion that Zelazoski et al teaches the formation of a "gathered top layer by thermal contraction" may be technically accurate, but in actuality is irrelevant to the patentability of the claimed invention due to such differing structure.

The rejection is thus without basis and should be withdrawn.

The application is now believed to be in condition for allowance and an early indication of same is earnestly solicited.

In the event that any outstanding matters remain in this application, applicants request that the Examiner contact James W. Hellwege (Reg. No. 28,808) at (703) 205-8000 to discuss such matters.

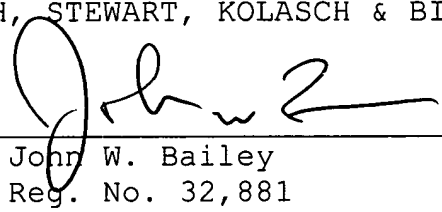
A check in the amount of \$120.00 is attached as payment for the requested two month extension of time.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Very truly yours,

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